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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/986,262	11/08/2001	Daniel Gudmunson	663-169/MBE	5008

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EXAMINER

MEONSKE, TONIA L

ART UNIT	PAPER NUMBER
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2183

DATE MAILED: 04/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/986,262

Applicant(s)

GUDMUNSON ET AL.

Examiner

Tonia L Meonske

Art Unit

2183

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 18-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 18-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-11 and 18-28 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Arvind et al., Executing a Program on the MIT Tagged-Token Dataflow Architecture, 1990, IEEE, pages 300-318, herein after “Arvind”.
3. The rejections are respectfully maintained and incorporated by reference as set forth in the last office action, mailed on July 27, 2004.

Response to Arguments

4. Applicant's arguments filed January 31, 2005 have been fully considered but they are not persuasive.
5. On pages 7-9, Applicant argues in essence :

“Arvind does not discuss any method for synchronizing instruction execution between processors beyond the arrival of the data tokens. Arvind et al. specifically differentiates the operation of the TTDA and its reliance upon data-driven instruction scheduling, from counter-based, clock scheduling (see page 300, col. 2).

...

The present application is directed towards a synchronous microprocessor architecture. A synchronous microprocessor architecture coordinates and synchronizes allocation of resources and execution of instructions with an internal clock or timing event.”

However, Applicant appears to be arguing a feature of the invention not specifically stated in the claim language, which is improper. Claimed subject

Art Unit: 2183

matter, not the specification, is the measure of invention. Limitations in the specification cannot be read into the claims for the purpose of avoiding the prior art. *In re Self*, 213 USPQ 1,5 (CCPA 1982); *In re Priest*, 199 USPQ 11,15 (CCPA 1978).

"It is the claims that measure the invention." SRI Int'l v. Matshshita Elec. Corp., 775 F.2d 1107, 1121, 227 USPQ 577, 585 (Fed. Cir. 1985) (*en banc*).

"The invention disclosed in Hiniker's written description may be outstanding in its field, but the name of the game is the claim." In re Hiniker Co., 47 USPQ2d 1523, 1529 (Fed. Cir. 1998).

"[A]s an initial matter, the PTO applies to the verbiage of the proposed claims the broadest reasonable meaning of the words in their ordinary usage as they would be understood by one of ordinary skill in the art, taking into account whatever enlightenment by way of definitions or otherwise that may be afforded by the written description contained in the applicant's specification." In re Morris, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997).

"limitations appearing in the specification will not be read into the claims, and ... interpreting what is meant by a word in a claim 'is not to be confused with adding an extraneous limitation appearing in the specification, which is improper'." Intervet Am., v. Kee-Vet Labs., 12 USPQ2d 1474, 1476 (Fed. Cir. 1989)(citation omitted).

"it is entirely proper to use the specification to interpret what the patentee meant by a word or phrase in the claim, ... this is not to be confused with adding an extraneous limitation appearing in the specification, which is improper. By 'extraneous,' we mean a limitation read into a claim from the specification wholly apart from any need to interpret ... particular words or phrases in the claim." In re Paulsen, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994) (citation omitted).

In this case, claim 1 merely requires "synchronous parallel processing."

Merriam-Webster's online dictionary defines synchronous as happening at precisely the same time. Arvind has taught many operators firing at the same time (page 303, left hand column, fifth paragraph under the section entitled "A. Basics"). These operators firing at the same time makes Arvind's system

Art Unit: 2183

synchronous, at least in part. The operators are then executed simultaneously, or in parallel (page 303). Therefore, Arvind has in fact taught “synchronous parallel processing”, at least to the extent claimed. If Applicant would like a specific meaning read into “synchronous parallel processing” beyond the broadest reasonable interpretation, then Applicant should specifically claim that meaning. Therefore this argument is moot.

6. On page 11, Applicant argues in essence:

“Step a: As claimed, instructions are distributed to one processing unit, before the data processing unit is available to process the instruction, whereas in Arvin et al. instructions are fetched by Instruction-Fetch Unit inside the processing element after the token has entered the Instruction Fetch Unit (each instruction corresponding to one general-purpose operator), and all memories are globally addressed (see Microprocessor Operation, page 314, col. 2)”

However, Arvind has taught instructions are distributed to one processing unit, before the data processing unit is available to process the instruction. The Wait Match Unit is part of the processing element, or data processing unit, see Figure 18. The tokens, or instructions, are sent to the Wait-Match Unit. If the Wait-Match Unit does not contain the partner for a dyadic operator, then the token is deposited in the Wait-Match Unit to wait for it. The token is sent to a processing unit before the processing unit is able to process the instruction. Therefore this argument is moot.

7. On page 11, Applicant argues in essence:

“Step c: As claimed, the data requests are sent for a whole data packet, whereas in Arvind et al.’s approach the data requests are sent only for individual operands for individual general-purpose operators.”

Art Unit: 2183

However claim 1 calls for sending a data request for at least one data packet.

Arvind has taught sending a read token, or data request, to read at least one token, or data packet (page 306). Therefore this argument is moot.

8. On page 11, Applicant argues in essence:

“Step d: As claimed, a record of the whole data packet requested is stored, whereas Arvind et al. stores only the records for data requests for individual operands for individual general-purpose operators.”

However, a token of Arvind is interpreted as the claimed data packet. In Arvind a record of the read token is stored in the deferred read requests area (page 306).

Therefore this argument is moot.

9. On pages 11 and 12, Applicant argues in essence:

“Step e: As claimed, the whole data packet is associated with the address of the data processing unit which is going to process the data packet, whereas in Arvind et al. the processing units are not addressable directly (see page 314: “In multiprocessor machine all memories are globally addressed”).”

However, in Arvind, a token tag specifies exactly which processing element that the token must go to and then the token is sent there directly (Arvind, Page 315, left hand column, first paragraph). This tag in Arvind, associated with the token, or data packet, associates the data packet with the address of the data processing unit that is going to process the data packet. Therefore this argument is moot.

10. On page 12, Applicant argues in essence:

“Step f: As claimed, each data token is associated with a whole data packet, whereas in Arvind et al. each data token is associated with each individual operand for each individual general-purpose operator.”

However, the limitations of claim 1 in step f require associating with each data packet sent out a data token showing the readiness of the packet for further

processing. Arvind has in fact taught associating with each data packet sent out (page 306, each read and write token request) a data token showing the readiness of the packet for further processing (Page 306, The presence bits are the data tokens that show the readiness of the packet, or token, for further processing i.e. “present”, “absent”, or “waiting”). Therefore this argument is moot.

11. On page 12, Applicant argues in essence:

“Step g: As claimed the whole arriving data packet is associated with an instruction, whereas Arvind et al. associates each arriving data unit with either one operand of a monadic individual general-purpose operator or one of two operands of a dyadic individual general-purpose operator (see page 314).”

However, the claim in step g requires associating the data packet with the corresponding instruction and distributing the data packet to the data processing unit. Arvind has taught associating the data packet with the corresponding instruction (page 306, left hand column, fourth paragraph, instruction tag) and distributing the data packet to the data processing unit (306, left hand column, fourth paragraph). Therefore this argument is moot.

12. On page 12, Applicant argues in essence:

“Step h: As claimed, the whole data packet is processed according to one instruction whereas Arvind et al. executes an individual general-purpose operator when all operands have arrived.”

However, claim 1 step h requires processing the data according to the corresponding instruction. Arvind has in fact taught processing the data according to the corresponding instruction. In Arvind when all the data arrives in the Wait-Match Unit, then instruction is fetched and executed using the data

Art Unit: 2183

(Page 314). The data is processed according to the corresponding instruction

(Page 314). Therefore this argument is moot.

13. On page 12, Applicant argues with respect to claim 18 in essence:

“As claimed, a digital data processor receives and sends data and instruction from/to external devices and distributes them to multiple data processing units, whereas in Arvind et al. multiple processing elements are connected through a network.”

However, Arvind has taught receiving (page 314, left hand column, paragraph 9) and sending (page 314, right hand column, paragraph 7) data and instruction from/to external devices (page 314, right hand column, paragraph 10) and distributing them to multiple data processing units (page 314, right hand column, paragraph 7). Therefore this argument is moot.

14. On page 12, Applicant argues in essence:

“As claimed, the digital data processor has a separate Instruction Path and Data Path, whereas in Arvind et al. instruction and data paths are mixed together in the Main Pipeline inside each processing element (see page 314).”

However, if applicant would like specific limitations read into the claims then applicant should specifically claim those limitations. The fact that the paths of Arvind may be mixed together is irrelevant, as Arvind has still taught an instruction path and a data path as claimed. Therefore this argument is moot.

15. On page 12, Applicant argues in essence:

“As claimed, the digital data processor has a plurality of data processing units organized for parallel processing, whereas in Arvind et al. multiple processing elements are directly connected.”

However, if applicant would like specific limitations read into the claims then applicant should specifically claim those limitations. Arvind has in fact taught a

Art Unit: 2183

plurality of data processing units organized for parallel processing (Page 314-315, see the section entitled "Multiprocessor Operation"). Therefore this argument is moot.

16. On page 12, Applicant argues in essence:

"As claimed, the instruction-distributing unit is located inside a digital data processor and distributes instructions to multiple data processing units, whereas in Arvind et al. each Instruction Fetch Unit is located inside each processing element (PE) itself."

However, after the instructions are fetched and computed, output tokens are created that are then sent to other processing elements (Page 314). So Arvind has in fact taught distributing instructions to multiple data processing units as claimed in claim 18. Therefore this argument is moot.

Conclusion

17. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

18. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2183

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tonia L Meonske whose telephone number is (571) 272-4170. The examiner can normally be reached on Monday-Friday, 8-4:30.

20. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie P Chan can be reached on (571) 272-4162. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

21. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

tlm


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